

Francisco Yumiceva

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Employment

- 2012-Current **Associate Professor**, Florida Institute of Technology, Melbourne FL.
- 2006-2012 **Research Associate**, Fermilab, Batavia IL.
- 2004-2006 **Research Associate**, College of William & Mary, Williamsburg VA.

Education

- 2001-2004 **Ph.D. Physics**, University of South Carolina, Columbia SC. Advisor: Prof. Milind Purohit
- 1998-2001 **M.Sc. Physics**, University of South Carolina, Columbia SC.
- 1992-1998 **B.Sc. Equivalent Physics**, National Polytechnic University, Quito Ecuador.

Awards and Recognitions

- 2015 Department of Energy (DOE) HEP Award 4-years.
- 2014 Department of Energy (DOE) HEP Award 1-year.
- 2014 Fermilab-LPC Guests & Visitors Award.
- 2014, 2013 CMS Fermilab-LPC Distinguished Researcher Award.
- 2002 Department of Physics Research Award. University of South Carolina.
- 2000, 2001, 2002 Recognition of Outstanding Graduate Work. Univ. of South Carolina USC.
- 1998 Scholarship to CUREA Summer Program in Astrophysics. Mt. Wilson Observatory.

Research Experience

- **CMS** Experiment at CERN (2006 – current).
- **MINOS** Experiment at Fermilab (2004 – 2006).
- **BABAR** Experiment at Stanford Linear Accelerator SLAC (2000-2004).

Leadership Experience

- Convener of the CMS b-tagging Performance Group (2011-2012).
- Convener of the CMS Top Pair BSM Group (Boosted Top Group) (2007-2009)
- Leader of the LHC-Physics-Center-Fermilab top quark working group (2010-2012)
- Convener of the LHC-Physics-Center (LPC) b-tagging Group (2009-2010)
- CMS Analysis Review Committee Member for Publications in Top, Higgs, SUSY, Exotica.
- Instructor in the CMS Data Analysis School (CMSDAS) 2011, 2012, 2013, 2014, 2015.

Outreach Activities

- Public lecture on the discovery of the Higgs boson. Science Café. Mar. 2013.
- Lectures on searches for the Higgs boson. Particle Physics School, Bogota Colombia. 2012.
- Initiated the first QuarkNet program in Ecuador, South America. Two cosmic ray detectors were installed in Quito, Ecuador in June 2011.

- Several public lectures about the LHC: over 700 people in Quito (June 2011 and Nov. 2009).
- Physics demonstrations and talks at elementary, middle, and high schools in IL and FL.
- Fermilab tours at the Saturday Morning Physics program and ask a scientist.

Teaching Experience

- Florida Institute of Technology:
 - *Graduate level*: Graduate Laboratory.
 - *Undergraduate*: Quantum Mechanics, Physics 1 (Mechanics), Physics 2 (Electromagnetism), Optics Experiments, Subatomic Physics, Electronics.
- College of William and Mary:
 - *Undergraduate*: Physics 1 (Mechanics).

Mentorship

Current Postdoctoral trainees:

- Dr. Daniel Noonan.

Current Graduate Students:

- Ms. Titas Roy.

Supervised Graduate Students:

- Shiyuan Xu MS Physics, Florida Tech 2015
- Dr. Geng-Yuan Jeng, UC Riverside. Currently postdoc at the University of Sydney in ATLAS.
- Dr. Ioana Anghel, Univ. of Illinois at Chicago. Currently postdoc at Argonne Lab. in MINOS.
- Dr. Jian Wang, IHEP Beijing. Currently postdoc in Brussels in CMS.
- Dr. Samvel Khalatyan, Univ. of Illinois at Chicago.
- Wei Zou, Pekin University.
- Dr. Pratima Jindal. Supervised as a visitor scientist at Fermilab.

Selected Presentations

- 2016 University of South Carolina Physics Colloquium. Title: Signs of New Physics at the LHC?
- 2015 University of Maryland HEP Seminar. Title: Measurement of the top quark mass using the b-jet energy peak.
- 2014 AAPT Winter Meeting Orlando FL. Talk: Connect Students with LHC Physics Using Cosmic Ray Detectors.
- 2013 Florida Institute of Technology Physics Colloquium. Talk: The Hunt for the Higgs Boson.
- 2012 School of Particle Physics Bogota Colombia. Lectures: Search for the Higgs Boson.
- 2012 SILAFEA 2012 Simposio Latinoamericano de Fisica de Altas Energias. Sao Paulo Brazil. Title: Search for Exotic Physics at the LHC
- 2012 CIPANP Conference on the Intersections of Particle and Nuclear Physics St Petersburg FL. Title: Search for new physics in top production and decay.
- 2010 Fermilab Annual Users' Meeting Batavia IL. Title: CMS Detector Commissioning, Performance and Upgrade.
- 2008 International Workshop on Top Quark Physics Biodola, Italy. Title: Top BSM, Prospects at CMS.

Selected Publications

A full list of publications (>700) can be found here: <http://goo.gl/h9S8nO>

Drafts in preparation

1. Khachatryan *et. al.* CMS Collaboration, “**Measurement of the $t\bar{t}$ bar+photon production cross-section using lepton+jets events in pp collisions at $\sqrt{s} = 8$ TeV**”. CMS-PAS-TOP-14-008. Publication expected in Summer 2016.

Primary Author or Significant Contribution

2. Khachatryan *et. al.* CMS Collaboration, “**Measurement of the top-quark mass from the b jet energy spectrum**”. Report [CMS-PAS-TOP-15-002](#).
3. Khachatryan *et. al.* CMS Collaboration, “**Determination of the top-quark mass from leptonic observables in pp collisions at $\sqrt{s} = 8$ TeV**”. Report [CMS-PAS-TOP-16-002](#).
4. Khachatryan *et. al.* CMS Collaboration, “**Search for a charged Higgs boson in pp collisions at $\sqrt{s} = 8$ TeV**”. [JHEP 1511\(2015\) 018](#).
5. Roy, T. and Yumiceva, F. *et. al.* “**QIE: performance studies of the next generation charge integrator**”. Journal of Instrumentation [JINST 10\(2015\) 02, C02009](#).
6. Khachatryan *et. al.* CMS Collaboration. “**Measurement of t-tbar production with additional jet activity, including b quark jets, in the dilepton channel using pp collisions at $\sqrt{s} = 8$ TeV**”. Submitted to EPJC. [CMS-TOP-12-041](#).
7. Khachatryan *et. al.* CMS Collaboration, “**Measurement of the inclusive top-quark pair+photon production cross section in the muon+jets channel in pp collisions at $\sqrt{s} = 8$ TeV**”. [CMS-PAS-TOP-13-011](#).
8. Khachatryan *et. al.* CMS Collaboration. “**Search for Higgs Boson Production in Association with a Top-Quark Pair and decaying to bottom quarks or tau leptons**”. [CMS-PAS-HIG-13-019](#).
9. Khachatryan *et. al.* CMS Collaboration “**Search for heavy W’ boson resonances decaying to a bottom quark and a top quark at $\sqrt{s} = 7$ TeV**”. [Phys. Lett. B718 1229-1251](#). DOI: 10.106/j.physletb.2012.12.008.
10. Khachatryan *et. al.* CMS Collaboration “**Search for resonant $t\bar{t}$ bar production in lepton+jets events in pp collisions at $\sqrt{s} = 7$ TeV**”. [JHEP 1212, 015](#). DOI: 10.1007/JHEP12(2012)015.
11. Khachatryan *et. al.* CMS Collaboration. “**Description and performance of track and primary-vertex reconstruction with the CMS tracker**”. Journal of Instrumentation [JINST 9\(2014\) P10009](#).
12. Khachatryan *et. al.* CMS Collaboration. “**Identification of b-quark jets with the CMS experiment**”. [JINST 8 \(2013\) P04013](#). DOI: 10.1088/1748-0221/8/04/P04013.
13. Chatrchyan *et. al.* CMS Collaboration. “**Measurement of the $t\bar{t}$ bar Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV in Lepton + Jets Events Using b-quark Jet Identification**”. [Phys. Rev. D 84, 092004\(2011\)](#).

14. Chatrchyan *et. al.* CMS Collaboration. “**Measurement of the Top-antitop Production Cross Section in pp Collisions at $\sqrt{s} = 7$ TeV using the Kinematic Properties of Events with Leptons and Jets**”. [EPJC 9 \(2011\) 1721](#).
15. T. Miao, H. Wenzel, F. Yumiceva and N. Leioatts. “**Beam position determination using tracks**”. [CERN-CMS-NOTE-2007-021](#), FERMILAB-FN-0816-E
16. P. Adamson *et. al.* MINOS Collaboration, “**First Observation of Separated Atmospheric $\nu\mu$ and anti- $\nu\mu$ events in the MINOS detector**”. [Phys. Rev. D73:072002, 2006](#).
17. B. Aubert *et. al.* BaBar Collaboration. “**Search for CP violation and a measurement of the relative branching fraction in $D^+ \rightarrow K^- K^+ \pi^+$ decays**” [Physical Review, PRD 71, 091101\(R\) \(2005\)](#). Yumiceva’s PhD Thesis.